

REMARKS

In the Office Action of August 23, 2007 (“Office Action”), Examiner rejected Claims 1, 4-6, 8-11 and 14-18 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,990,928 (“Sklar”) in view of U.S. Patent 6,018,659 (“Ayyagari”) and U.S. Patent 5,537,122 (“Eguchi”).

Examiner rejected Claims 7 under 35 U.S.C. §103(a) as being unpatentable over Sklar, Ayyagari, and Eguchi, further in view of U.S. Patent 5,526,022 (“Donahue”). Also, Examiner rejected Claim 13 under 35 U.S.C. §103(a) as being unpatentable over Sklar, Ayyagari, Eguchi and U.S. Patent 6,166,686 (“Lazar”).

Examiner objected to Claims 2-3 and 19-24 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant respectfully traverses the rejections and submits the following arguments.

Independent Claims 1 and 17: One Dimensionally Electronically-Pointable Antenna Mounted Upon A Motorized Turntable

Applicant’s Claim 1 specifically recites:

a one dimensionally electronically-pointable antenna mounted upon a motorized turntable to provide two-dimensional pointing

In this regard, Applicant’s Claim 1 calls out for a specific configuration of antenna to be used to gain the advantages present in that type of antenna.

Sklar calls out a tracking antenna 38. The only discussion in Sklar as to the configuration of the tracking antenna 38 is, as pointed out by the Examiner, that the tracking antenna “typically takes the form of a parabolic dish” and that it “may or may not be parabolic.” Sklar column 3, lines 10-11 and 13-14 and column 6, lines 1-2. Indeed, in Sklar, no details as to the construction of the tracking antenna 38 are given

beyond that it “may or may not be parabolic.” Accordingly, any hypothetical construction of the tracking antenna 38 and/or subsequent modification, reengineering and/or piecemeal dissection of such a hypothesized construction would be conjecture unsupported by the disclosure of Sklar.

Ayyagari calls out a staring beam antenna 132. As pointed out by the Examiner, the staring beam antenna may be a phased array antenna. However, in describing possible configurations of the antennae in Ayyagari, Ayyagari states:

RF beam antennas can be either mechanically steerable antennas or electronically steered directed beam antennas, such as PAAs. Ayyagari column 6, lines 13-15 (emphasis added).

Clearly, Ayyagari contemplates one of only two possibilities: either a mechanically steerable antenna or an electronically steerable antenna. The use of “or” in the quoted passage indicates that Ayyagari does not contemplate a hybrid antenna. Furthermore, as in Sklar discussed above, the antenna 132 is discussed as a unit and any hypothetical construction, modification, reengineering and/or piecemeal dissection would be conjecture unsupported by the disclosure of Ayyagari.

Further, neither Sklar nor Ayyagari provide any suggestion or motivation to combine the teachings thereof. Indeed, there is no suggestion or motivation in Sklar to replace or reengineer the tracking antenna 38. Similarly, there is no suggestion or motivation in Ayyagari to replace or reengineer the staring beam antenna 132. Further, there is no apparent reason to combine Sklar and Ayyagari. Therefore, it is not obvious to combine Sklar and Ayyagari.

Obviously, neither Sklar nor Ayyagari disclose a one dimensionally electronically-pointable antenna mounted upon a motorized turntable. Additionally, no combination of the antenna described in Sklar (which simply “may or may not be parabolic”) and the antenna described in Ayyagari (“mechanically steerable antennas or electronically steered”) yields a one dimensionally electronically-pointable antenna mounted upon a motorized turntable. Indeed, neither Sklar nor Ayyagari even disclose a motorized turntable.

Examiner states, “It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Sklar with the teachings of Ayyagari using the phased array antenna.” Office Action page 4. However, even if such a combination were proper, modifying Sklar with the phased array antenna of Ayyagari would yield an electronically steerable phased array antenna in place of the tracking antenna 38 of Sklar – not a hybrid a one dimensionally electronically-pointable antenna mounted upon a motorized turntable. Particularly when, as previously noted, Ayyagari only contemplates a mechanically driven antenna or an electronically steerable antenna and Sklar only contemplates that the antenna may or may not by parabolic.

Claim 17 also includes the limitation of a one dimensionally electronically-pointable antenna mounted upon a motorized turntable. As such, the above arguments with respect to Claim 1 also apply to Claim 17.

In view of the foregoing, Applicant submits that independent Claims 1 and 17 are allowable and respectfully requests such disposition. Applicant further submits Claims 2-10 and 18-24, which depend from Claims 1 and 17, respectively, are allowable for the same reasons as Claims 1 and 17, and further since such claims present further combinative features not disclosed or rendered obvious by the prior art.

Independent Claims 1, 11 and 17: Open-Loop and Closed-Loop Control

In the Examiner’s “Response to Arguments” of the Office Action, Examiner states, “applicant argues that Eguchi is not enabled to operate in open-loop and closed-loop.” In this regard, Applicant acknowledges that Eguchi discloses aspects of open-loop and closed-loop control systems. However, an examination of the control methodology of Eguchi reveals that it does not meet the claimed subject matter of Applicant’s Claim 1.

Eguchi uses a “low-cost hybrid antenna control system (combined a closed-loop antenna tracking with an open-loop antenna control) based upon a beam-switch tracking (BST) and an angular rate sensor.” Eguchi column 2, lines 44-47.

When no signal is being received by the hybrid antenna control system, the hybrid antenna control system uses the output of the angular rate sensor to perform open-loop antenna control. Eguchi column 2, lines 54-57.

When the hybrid antenna control system is receiving a signal, the hybrid antenna control system uses a beam switch controller 46 that produces a control signal based on the received signal that is used to control the position of the antenna. Eguchi column 7, lines 15-33. This is the closed-loop aspect of the Eguchi hybrid antenna control system.

“However, the tracking signal generated as described above does not directly serve as an AZ-axis control signal. That is, to generate a tracking signal, the beam switch controller 46 further combines an angular rate signal supplied through the HPF 48 from the rate sensor 20 with the tracking signal.” Eguchi column 7, lines 34-39 (emphasis added). Indeed, “the closed-loop tracking signal and the rate-sensor output (high pass filtered) for open-loop control are always mixed.” Eguchi column 3, lines 14-16 (emphasis added). Also, “the high-pass filtered output is always...fed back.” Eguchi column 8, lines 15-16 (emphasis added).

In summation of the Eguchi control system:

		Signal Condition
		Signal Received by Antenna
		Signal Blocked
Control method		Closed-Loop
		and
		Open-Loop
		Open-Loop

Thus, the open-loop antenna control is always on and the open-loop antenna control is not switched on and off based on signal level.

Consequently, Eguchi does not teach a system that is “alternatively in closed-loop or open-loop operation.” Office Action, page 5 (emphasis added). In this regard, Applicant respectfully avers that Eguchi does not teach the claimed subject matter of Applicant’s Claims 1, 11 and 17.

In view of the foregoing, Applicant submits that independent Claims 1, 11 and 17 are allowable and respectfully requests such disposition. Applicant further submits Claims 2-10, 13-16 and 18-24, which depend from Claims 1, 11 and 17, respectively, are allowable for the same reasons as Claims 1, 11 and 17, and further since such claims present further combinative features not disclosed or rendered obvious by the prior art.

Combination of Eguchi with Sklar

Eguchi specifically teaches away from the combination with Sklar as proposed by the Examiner in the Office Action. In particular, an object of Eguchi is to realize a “hybrid antenna control system without time lag for transition (from closed-loop control to open-loop control, or vice versa).” Eguchi column 3, lines 10-12. Therefore, as described above, Eguchi presents a system where the open-loop control system is always on and is not switched on and off every time a signal is lost. In this regard, Eguchi teaches away from a system that switches between open-loop and closed-loop operation. Accordingly, Applicant believes that it is inappropriate to use Eguchi in combination with Sklar in an obviousness rejection of a system such as Applicant’s that includes “a signal lock for automatically switching between said open-loop and closed-loop control systems.” Applicant’s Claim 17. Thus, Applicant respectfully requests that the combination of Sklar and Eguchi be withdrawn.

Rejection of Claim 9 under 35 U.S.C. §103(a) over Sklar in view of Ayyagari and Eguchi

Applicant’s Claim 9 claims, inter alia, activating open-loop operation based on a loss of signal. As discussed at length above, Eguchi open-loop control is always on. Therefore, the disclosure of Eguchi does not disclose activating open-loop control (which implies that prior to activation, the open-loop control was not active) based on loss of a signal as disclosed in Applicant’s Claim 9. Therefore, Applicant requests that the 35 U.S.C. §103(a) rejection of Claim 9 be withdrawn.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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